

AN ASSESSMENT OF TRENDS IN CHILD MORTALITY ESTIMATES IN TANZANIA DURING THE NINETIES: A SUMMARY

Comparing the results of the TRCHS 1999 with the TDHS 1996 suggests that child mortality in Tanzania has increased. Yet, five-year trends within the TRCHS suggest the opposite. How should these trends be interpreted? This brief summarizes the results of an analysis that investigated why there are differences in mortality between the two surveys and how the overall trend should be interpreted [1].

Mortality in the most recent period preceding each survey

Figure 1 shows the under-five and infant mortality levels in Tanzania as a whole during the five-year periods before each survey, with the 95% confidence limits. Even though mortality is higher in the TRCHS 1999 than in the two DHS surveys, none of the differences is statistically significant and can be due to sampling error. The sampling error in the TRCHS 1999 is larger than in TDHS 1996 and TDHS 1991 because the sample size was only half of the previous two surveys. It appears there was little change between 1987-1991 and 1992-1996, and perhaps there was a small increase during 1995-99 compared with 1991-96.

Trends within each survey suggest decline

The use of a complete birth history to collect child mortality data in DHS surveys permits an estimation of trends in mortality by five-year periods. All three surveys show a decline in under-five mortality for the most recent period compared with the preceding five-year period. The decline was largest in the TDHS: from 168 to 141 per 1,000 live births (16% decline), followed by the TRCHS 1999 (14% decline) and the TDHS 1996 (11% decline). The level of mortality in the TRCHS 1999 in all five-year periods is, however, higher than in the TDHS 1996 (about 10% higher) and in the TDHS 1991 (about 6% higher). These within-survey data seem to contradict the trend observed in the most recent period preceding each survey.

Figure 1
Under-five and infant mortality (per 1,000 live births), Tanzania: 0-4 years prior to each survey (with 95% confidence limits)

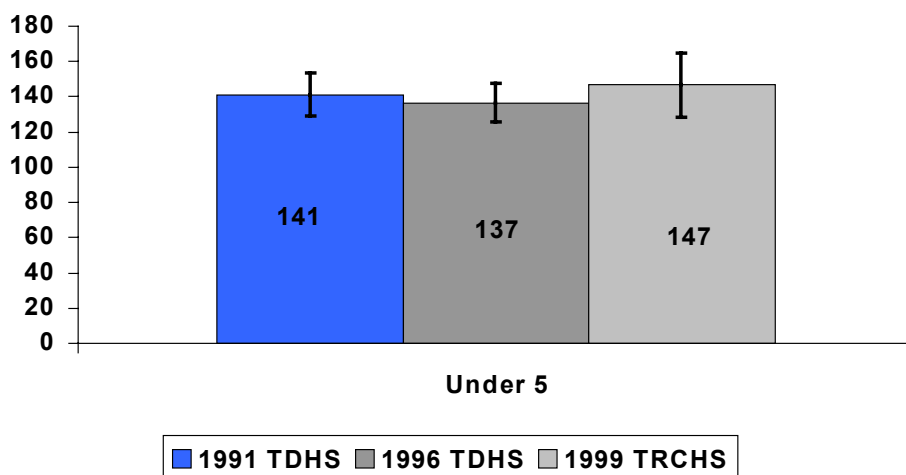
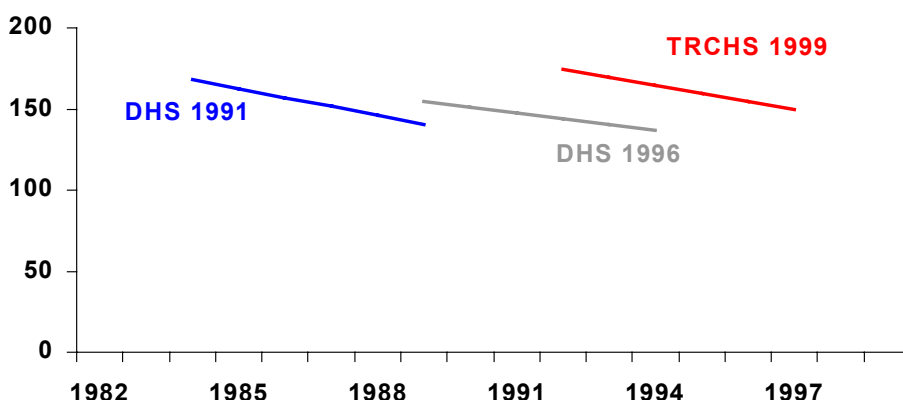


Figure 2
Under-five mortality trends in Tanzania, 1985 - 1999, based on the two five-year periods preceding each survey



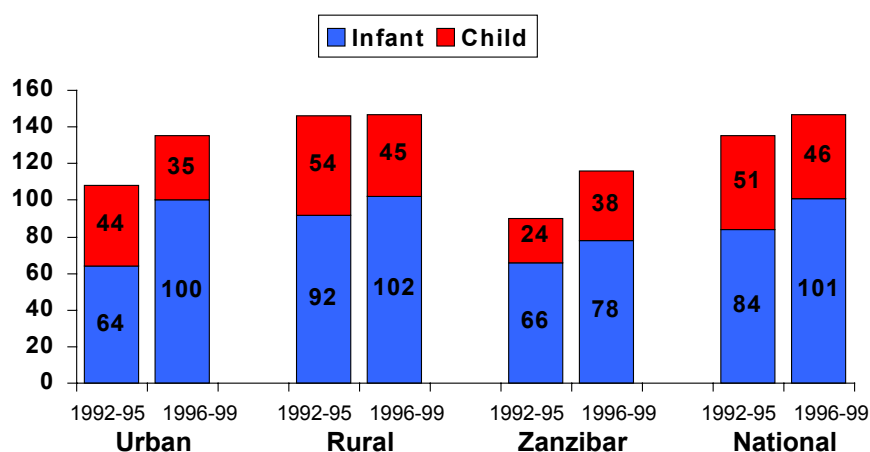
Same clusters and four-year periods: no difference

To better judge the true mortality trend in Tanzania, the analysis was limited to the 176 sampling clusters that were included in both surveys. This implied that the TRCHS 1999 stayed as it was and that the analysis of the TDHS 1996 was limited to only those clusters that were included in the TRCHS 1999. The sampling weights of the TRCHS 1999 were used for both surveys. In addition, four-year reference periods were used instead of the conventional five-year periods. This reduced the overlap of reference periods between the two surveys. The analysis was also done for three-year periods, but numbers of children became too small. The restrictions made little difference: child mortality was 147 per 1,000 live births for 1996-99, up from 137 for 1993-1996 in the same 172 clusters, but the difference is not statistically significant.

Urban mainland, rural mainland and Zanzibar

Figure 3 shows that infant mortality increased and mortality at 1-4 years decreased when comparing 1993-96 with 1996-99. The increase in infant mortality is strongest in urban mainland, and followed by Zanzibar and rural mainland. The increase in the urban infant mortality is largely due to much higher first-month (neonatal) mortality, but it is possible that the 1996 survey data underestimated neonatal mortality. Child mortality decreased in urban and rural mainland, but not in Zanzibar. It is important to keep in mind that all estimates – especially those for urban mainland and Zanzibar – are subject to very large sample variation

Figure 3
Under-five and infant mortality by residence: 1992-95 and 1996-99 in the same clusters, TDHS 1996 and TRCHS 1999



Can it be due to AIDS?

HIV prevalence in Tanzania increased gradually to nearly 10% in Tanzania during the nineties. Can mother-to-child transmission be the cause of the observed mortality trends? HIV infection can possibly have the following effect on child mortality:

- Urban mainland mortality increases would be larger than rural mainland and Zanzibar, because HIV prevalence among pregnant women was higher in urban mainland areas during the nineties. This is partly true.
- Child mortality increases would be larger than infant mortality increases, which is not the case.
- The size of the increase in under-five mortality would be about 9 per 1,000 live births between 1993-96 and 1996-99, if we assume that national HIV prevalence increased from 5% during 1993-96 to 9% during 1996-99.

Conclusion

The best way to assess trends in child mortality in Tanzania during the nineties is to focus on the most recent period estimate of each survey. In that case under-five mortality in Tanzania has been pretty much at the same level – with perhaps a slight decline in urban areas – since the mid-eighties, at a level of about 140 per 1,000 live births. In recent years, however, HIV/AIDS is likely to have become a more significant cause of death and may have contributed to a modest increase or neutralization of a modest decline in child mortality.

[1] Details can be found in “An assessment of trends in child mortality in Tanzania during the nineties”. An in-depth analysis of the TDHS 1996 and the TRCHS 1999, MEASURE DHS+ and MEASURE Evaluation, June 2000.